

als and workmanship explained as fully as possible  
writing report 6th June, 1963 Received London Port HANNOVER No. J 42 1  
nd is in held at Hameln No. of visits in shop 4 First date 14.12.62 Last date 27.5.63

# 1ST ENTRY REPORT ON MAIN ENGINE REDUCTION GEARING

of Ship Owners  
built at Elmsborn by Kremer Sohn  
engines made at Köln-Deutz by Weserwerft GmbH Yard No. 1001 Year 1963  
tion gearing made at Hameln by Klöckner-Humboldt-Deutz Engine No. Year  
of engine with which gearing is to be used SBA 8 M 517 Gear No. 30548+59 Year  
Type WUö 180/3.5 : 1  
State if for Class 1 or 2 ice strengthening

Following particulars are to be given as fully and clearly as possible. Wording not applicable should be cancelled by a black line.

Description of gearing, including reversing arrangements and

es, if any, and No. of sets (state if ball or roller bearings)  
single reduction spur wheel geared,  
multiple disk clutch operated by oil  
s., Reverse side: Planet bevel  
ed and band bracke operated by oil  
s., oil pump gear driven.

er and ball bearings

gle helical, what is the position of the gear thrust bearing?

aligning roller bearing on output

angle, primary secondary

of involute tooth form

ONS

num S.H.P. to be delivered to primary pinions ...

utions per minute ...

eter of pitch circle, inches/mm. ...

f teeth ...

width of face, parallel to axis, inches/mm. ...

of gap, inches/mm. ...

eter of shaft bearings, inches/mm. ...

f bearings ...

of bearing centres, inches/mm. ...

ial, state nominal composition and heat treatment

ft forged

r wheels case hardened

e strength, tons per sq. in./kg. per sq. mm. ...

ne No. L SHAFTS

eter, inches/mm. ...

ial, state nominal composition ...

e strength, tons per sq. in./kg. per sq. mm. ...

IBLE COUPLINGS

of coupling ...

ial, driving member ...

e strength, tons per sq. in./kg. per sq. mm. ...

ial, driven member ...

e strength, tons per sq. in./kg. per sq. mm. ...

couplings permit axial float of pinions? no

Have primary pinions been dynamically

ed? no

Have secondary pinions been dynamically or statically balanced?

LS

ations per minute ...

eter of pitch circle, inches/mm. ...

teeth ...

6657 d

6657 d

6657 d

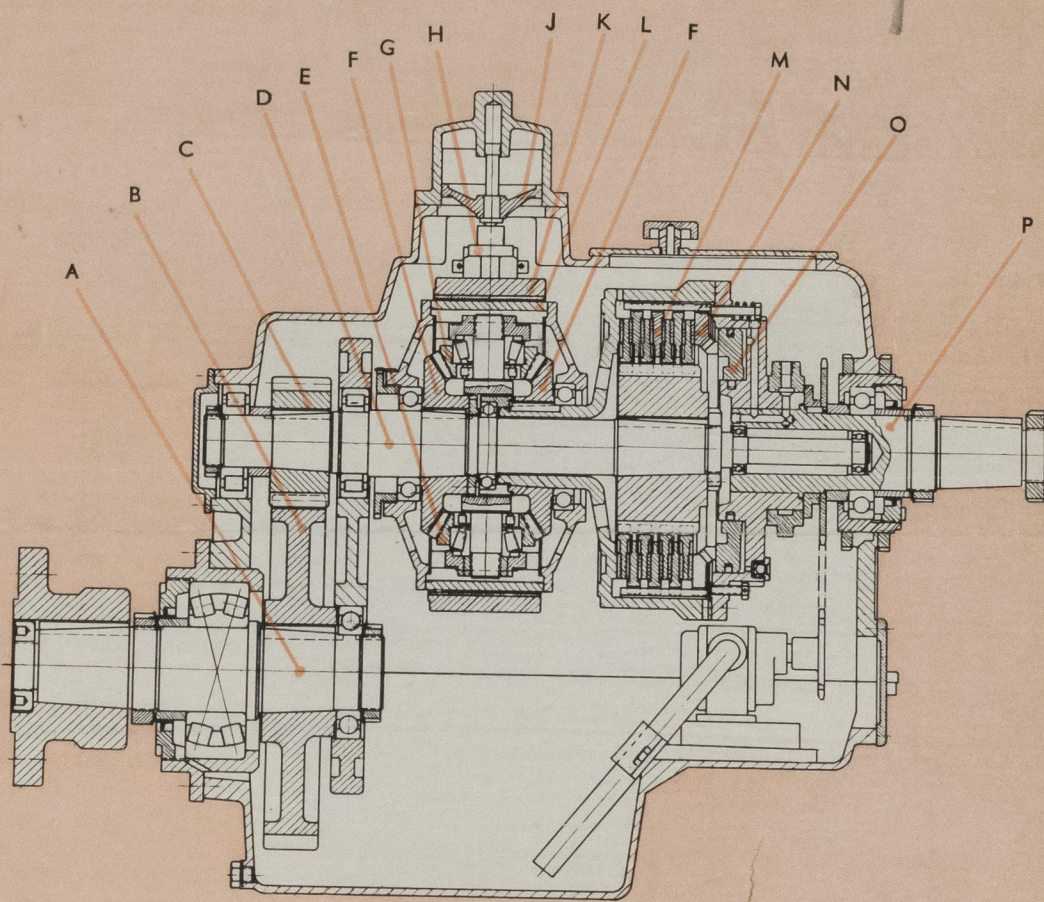
6657 d

6657 d

6657 d

6657 d

DIAGRAMMATIC SKETCH SHOWING ARRANGEMENTS OF GEARING



Working

82 at top of cone 65 ✓ 85 ✓

C 45

C 45

C 45

EC 80

multiple disk clutch

C 35

GG 22 (cast iron)

min. 22

PRIMARY			
HP	MP	LP	MAIN



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Foundation

011628-011635-0020



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d? no

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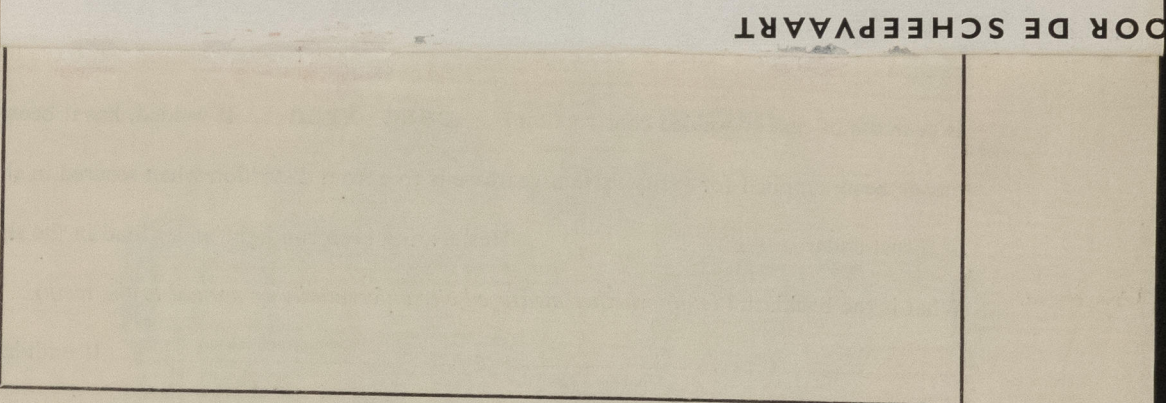
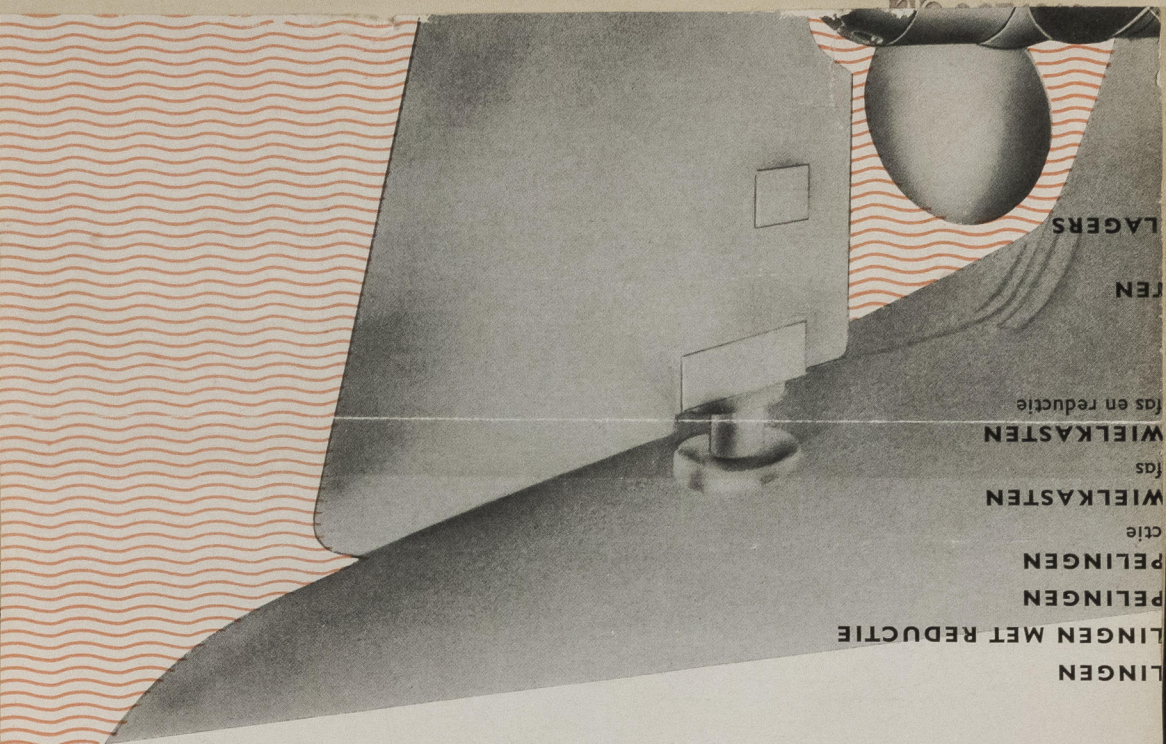
LS

tions per minute ...

er of pitch circle, inches/mm. ...

teeth ...

T. (MADE AND PRINTED IN ENGLAND)



Approved maximum total S.H.P. 230 ✓ at 386 ✓ R.P.M. of main wheel

put	PRIMARY			SECONDARY		Output
	MP	LP	HP	MP	LP	
30 ✓						
50 ✓					386 ✓	
755				401, 245		
20				70		
34				80		
✓ at top of cone		65 ✓		85 ✓		
C 45		C 45		C 45		
		EC 80				

Have primary pinions been dynamically

Have secondary pinions been dynamically or statically balanced?

PRIMARY			MAIN
HP	MP	LP	
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### WHEELS (continued)

	PRIMARY			MAIN
	HP	MP	LP	
Material of rims, state nominal composition ...				
Tensile strength, tons per sq. in./kg. per sq. mm. ...				
Diameter of shaft at bearings, inches/mm. ...				
Material of shaft ...				
Tensile strength, tons per sq. in./kg. per sq. mm. ...				

Have wheels been statically balanced? yes Are wheel bodies of cast or welded construction? No., forged  
 Are wheel bodies connected to the shafts by bolts? no, solid Material of wheel bodies \_\_\_\_\_  
 Are rims shrunk on, or bolted to bodies, or attached by welding? no, solid Are radial or axial dowels fitted? —  
 If shrunk, has the shrinkage allowance been checked and found as approved? \_\_\_\_\_ How were the teeth cut? by hobbing  
 If hobbed, name and serial no. of hobbing machine Walzautomat URS 1 What post-hobbing process was applied? grinding  
 Name and serial no. of machine used for finishing process Type UR 1000 No. 10 189 If teeth are surface hardened, state method case hardened Were teeth cut under conditions of temperature control? \_\_\_\_\_  
 Is gearcase of cast or welded construction? cast iron If welded, has it been stress relieved? \_\_\_\_\_ Have trammels or other means been supplied for verifying that gearcase is free from distortion when secured in ship? \_\_\_\_\_ Diameter of shaft at thrust collar \_\_\_\_\_ Has gearing been run light/under load in the shop and the tooth contact found satisfactory? \_\_\_\_\_  
 What is the backlash? (state whether measured circumferentially or normal to the teeth) 0.32 and 0.28 mm  
 \_\_\_\_\_ If undulation records were taken, state maximum height from crest to trough \_\_\_\_\_  
 and wave length, pinions \_\_\_\_\_  
 \_\_\_\_\_ wheels \_\_\_\_\_  
 Maximum adjacent pitch error normal to teeth, if measured, pinions \_\_\_\_\_  
 \_\_\_\_\_ wheels \_\_\_\_\_ Date of approval of plans 5/11/62, 11/1/63, 6/3/63  
 If gearing is a duplicate of a previous case, state name of ship Messrs. Kremer & Sohn, Elmshorn Yard No. 1100, 1101, 1102, 1103  
 The foregoing description of reduction gearing is correct.

### GENERAL REMARKS

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State if the gearing has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. This report should be forwarded to the Head Office with the First Entry report on the machinery. When gearing is made at a Port other than the Port of installation, the Surveyors at the former should send this report to the Surveyors at the Port of installation as soon as possible after completion of the gearing. The latter should complete the Declaration below and send the report to the Head Office with their First Entry report on the machinery.

These main reversible reduction gears have been constructed under special survey in accordance with the requirements of the Rules, approved plans and Secretary's letters.

The material used was tested and the workmanship satisfactory.

The gears would be eligible for the notation + LMC (with date) when the whole machinery has been satisfactorily fitted on board and tried under full working condition.

Survey fee ..... \$5.00

Expenses.....

Date when a/c rendered .....

*J. Brunelliciot*  
Engineer Surveyor to Lloyd's Register of Shipping

IDENTIFICATION MARKS LLOYD'S HNO 27.5.63 HB on Gear Box

PRIMARY PINIONS LLOYD'S DSF 227 - 43187 T 14168 - 668 O.K. 408447 SW 29.11.62 H.S.

PRIMARY OIL SHAFTS 658 LLOYD'S KLN 1927 HL 6.11.62 NN

SECONDARY PINIONS.....LLOYD'S DSF 228 43187 T 14168 OK 40847 SW 29.11.62 HS

SECONDARY ~~QUIL~~ SHAFTS 656 LLOYD'S KLN 1927 HL 6.11.62

659 LLOYD'S KLN 1927 HL 22.11.62 FK

Bevel Gear Wheels: 226 43156 T 14169 146513 LLOYD'S DSF 29.11.62 HS

## PRIMARY WHEEL RIMS

### PRIMARY WHEEL SHAFTS

MAIN WHEEL RIM 228 LLOYD'S DSF 43187 T.6680K 40847SW 29.11.62 HS  
MAIN WHEEL SHAFT 653 LLOYD'S DSE 1927 HL 6.11.62 F

## DECLARATION TO BE COMPLETED AND SIGNED BY THE SURVEYOR AT THE PORT OF INSTALLATION

The above reduction gearing has been fitted on board the ..... at .....

in a proper manner and found satisfactory when tested on the (date)..... under full-power working conditions for.....

hours and when examined subsequently.

FRIDAY - 1 NOV 1963

DATE OF COMMITTEE.....

DECISION See Stam (284)

*Engineer Surveyor to Lloyd's Register of Shipping*

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